A similar variation is to be observed in the family *Pteriadæ*: in *Malleus, Baphia, Pteria* and *Margaritiphora*, the cartilage is in a single central triangular pit; in *Crenatula* it is divided into several portions, each placed in a separate marginal pit; and in *Melina* it is placed in numerous marginal pits which form cross grooves on the talus of the thickened hinge-margin.

[To be continued.]

BIBLIOGRAPHICAL NOTICES.

Revue et Magasin de Zoologie. Par M. F. E. Guérin-Méneville. Nos. 4–6, April–June 1852. Paris, 8vo.

I. Zoological Miscellanies:—Notices and observations on some Vertebrata new to the Fauna of Provence, by M. Z. Gerbe (IV. pp. 161–174).

These consist of—

1. Notice on *Certhia Costæ*, Bailly, giving an account of the occurrence of this bird in the "Basses Alpes," together with a description of the bird, and a statement of the points in which it differs from *C. familiaris*; this paper is accompanied by a plate (pl. 8) showing the characters of the two birds.

2. Observations on *Strix Tengmalmi*, Gmel., stating that this bird is common in the mountains of Provence.

II. Note on a new European species of *Hippolaïs*, by M. Z. Gerbe (pp. 174–175). Of this bird M. Gerbe gives the following character:—

Hippolaïs pallida. H. supra pallide griseo-olivacea, subtus ex albo flavescens; oculorum ambitu superciliisque sordide flavescentibus; remigum secundus sexto brevior; rectricibus duabus utrinque extimis margine interno albidis.

Colore et conformatione cum *H. elæica* convenit; ab illa autem discrepat magnitudine, qua eam antecellit, longitudine rostri, alarum, caudæ, remigumque proportione.—Hab. in Hispania.

III. Descriptions of three species of *Rodentia* belonging to the genus *Arvicola* (VI. pp. 257–270). This portion of the paper contains only the description of one species (*A. leucura*), the character of which was published in the last Number of the 'Annals.' A coloured figure of this animal is given on pl. 11 of the present volume of the 'Revue et Magasin de Zoologie.'

IV. Monograph of the family of *Torpedinidæ*, &c., by M. Aug. Duméril (IV. pp. 176–189; V. pp. 227–244; and VI. pp. 270–285).

The author commences by observing that but few animals are furnished with an apparatus for the production of electrical phænomena, and that these are all fishes. Those in which the existence of these organs has been ascertained are the fishes forming the family *Torpedinidæ*, of which M. Duméril here describes seventeen species, the

Malapterurus electricus, a Siluroid fish inhabiting the Nile, and the *Gymnotus electricus*, or Electrical Eel of South America. Similar organs have also been attributed to three other fishes, but their existence has not been proved. These are the *Trichiurus electricus*, *Tetraodon electricus*, and *Rhinobatus electricus*.

The author then passes in review the various opinions which have from time to time been put forth as to the possession of electrical properties by the various species of Rays; the evidence existing on the subject being, in his opinion, insufficient to establish the fact of the existence of such properties, although the matter may still be regarded as doubtful. He then proceeds to some general observations on the history of this branch of Ichthyology, and afterwards passes to the description of the electrical organs of the Torpedo, and of those parts of its anatomy which appear to be immediately connected therewith; the details of this description are for the most part derived from M. Savi's paper on the same subject. Then follow descriptions of the genera and species. Of this part of the work the following is an abstract:—

Family Torpedinidæ (*Torpédiniens*).

Body discoid, flat, rounded, smooth and naked; tail short, fleshy; ventral fins (*catopes*) immediately behind the pectorals (*pleuropes*); dorsal fins (*epiptera*) one or two, or entirely wanting; nasal valvules united to form a single lobe, with its margin free; teeth pointed; possessing an electrical apparatus.

This family, according to M. Duméril, contains five genera, of which one is here described for the first time. Of these he gives the following synoptical table:—

- Dorsal fins or epiptera
  - distinct
    - with two eyes
      - eyes distant from the spiracula ..... 1. Torpedo.
      - eyes close to the spiracula
        - tail longer than the disc ..... 2. Narcine.
        - tail very short ... 3. Hypnos (n. g.).
    - with but one eye ..... 4. Astrape.
  - wanting ..... 5. Temera.

Genus 1. Torpedo, Duméril.

To this genus M. Duméril refers seven species, of which he gives the following tabular arrangement:—

- Disc
  - more or less orbicular.
    - base of tail very broad
      - ventrals elliptical
        - dorsal fins large ..... 2. T. marmorata, *Risso*.
        - dorsal fins small ..... 3. T. trepidans, *Val.* (T. bebetans, *Lowe* ?)
      - ventrals circular ..... 4. T. panthera, *Ehrenb.*
    - base of tail a little narrowed
      - 1st dorsal broad and rounded
        - spiracula annular ..... 1. T. oculata, *Belon.*
        - spiracula reniform ..... 6. T. Nobiliana, *Bonap.*
      - 1st dorsal long and tapering ... 5. T. Sinûs Persici, *Kämpf.*
  - nearly quadrangular ..... 7. T. occidentalis, *Storer.*

Genus 2. Narcine, Henle.

This genus also contains seven species, of which four are described as new. M. Duméril does not seem to be aware of the two species of this genus described by Sir John Richardson in the British Asso-

ciation Reports for 1845, and in the Proceedings of the Zoological Society for March 1840; these will raise the number of species included in the genus to nine. M. Duméril gives the following synopsis of the species known to him :—

Disc
- elliptical
  - outer angle of the ventral fins rounded ..... 1. N. brasiliensis, *Olf.*
  - " " pointed ..... 2. N. Timlei, *Bloch.*
- pentagonal
  - lateral margins very unequal
    - eyes smaller than the spiracula 3. N. indica, *Henle.*
    - eyes equal to the spiracula ..... 4. N. maculata, n. s. (Java).
  - lateral margins nearly equal ..... 5. N. microphthalma, n. s. (India).
- nearly circular
  - caudal fin elongated and narrow ..... 6. N. nigra, n. s. (Brazil).
  - " rounded ..... 7. N. macrura, n. s. (Indian ocean).

Genus 3. Hypnos, n. g.

Disc elongated, a little emarginate at the middle of its anterior margin; spiracula very close to the eyes, bordered with a crown of numerous long teeth; no cartilages to the lips; mouth large, semilunar, not protractile; teeth pointed, not passing the margin of the jaws, of which they occupy the whole length, and to which they are parallel; bridle of the nasal valve attached to the anterior margin of the upper lip; tail very short, only passing the posterior margin of the ventral fin by the length of the caudal, which is very small; two dorsal fins, first smaller than the second.

This genus contains but one species, which M. Duméril describes and figures (pl. 12) under the name of *H. subnigrum*. It is from Australia.

Genus 4. Astrape, Müll. and Henle.

Of this genus M. Duméril enumerates only two species—*A. capensis*, derived as implied by its name from the Cape of Good Hope—and *A. dipterygia*, Cantor, from the Straits of Malacca.

Genus 5. Temera, Gray.

This genus includes but one species—*T. Hardwickii*, Gray.

M. Duméril closes his memoir with a note upon the fossil Torpedo (*T. gigantea*) found in the Moute-Bolca, near Verona.

V. Descriptions of new species of Lepidoptera belonging to the Museum of Paris, by M. H. Lucas (second and third decades, IV. pp. 189–198, and VI. pp. 290–300).

These descriptions, like those previously published by the same author, are unaccompanied by any diagnoses. The species are as follows :—in No. 4,—

1. *Papilio Phronius*. Resembles *P. Proteus*. From Cayenne.
2. *Papilio Zeuxis*. A little smaller than *P. Proteus*, to which it is allied. From Venezuela.
3. *Papilio Bochus*. Confounded by Cramer and Godart with *P. Æneas* of Linnæus; it is larger than that species and comes near *P. Vertumnus* and *Proteus*. From Cayenne.
4. *Papilio Orbignyanus*. Allied to *P. Proteus*. From the environs of Corrientes.
5. *Papilio Gayi*. Allied to *P. Æneas*. From the environs of Cusco.

6. *Papilio Neodamas.* Very near *P. Polydamas* and *Protodamas.* From the Antilles.

7. *Euterpe Cæsarea.* Smaller than *E. Charops,* to which it is allied. Inhabits Columbia.

8. *Euterpe Notha.* Wings white with black nervures, and more or less spotted and edged with black. Inhabits Venezuela.

9. *Euterpe Hebra.* Wings blackish brown, with a greenish white band, which is much broader on the posterior wings than in *E. Nimbice.* From Columbia.

10. *Euterpe Cora.* A little smaller than *E. Nimbice.* From the environs of Cusco.

In No. 6—

1. *Euterpe Telasco.* From Cusco.

2. *Euterpe Semiramis.* Allied to *E. Nimbice* and *Toca,* but with the wings more strongly toothed. From Columbia.

3. *Euterpe modesta.* Allied to the preceding. From Cusco.

4. *Euterpe Sebennica.* From Mexico.

5. *Leptalis Beroë.* Allied to *L. Amphione.* Bogota.

6. *Leptalis Lewyi.* Somewhat like *L. Nemesis,* but with the anterior wings not acuminate at the apex; the inferior wings not traversed by a black line. Also from Bogota.

7. *Leptalis Euryope.* Allied to the preceding. From Mexico.

8. *Leptalis Fœdora.* Like the preceding, but smaller. From Venezuela.

9. *Leptalis Kollari.* Allied to *L. Thermesia*; wings white; anterior with a black spot at the apex; posterior bordered with black. From Venezuela.

10. *Pieris Cæsia.* Somewhat allied to *P. Calydonia*; wings brownish black; superior with a large bluish white longitudinal band, and a smaller transverse band of the same colour; inferior with the costal margin and the disc bluish white. From Quito.

VI. Observations made in America upon the habits of various species of Humming-birds, followed by some notes upon the anatomy and habits of the Hoazin, the Caurale and the Savacou, by M. Emile Deville (V. pp. 209–226).

The author was five years in South America attached to the scientific mission of M. de Castelnau; during this period he occupied himself with the study of the habits of birds, of the geographical distribution of animals, and as far as was practicable of comparative anatomy. The present paper contains the author's notes upon the subjects indicated in its title.

On Humming Birds.

After giving a general view of the habits and mode of life of these beautiful little birds, the author proceeds to record the peculiarities of those species which he had an opportunity of observing in South America.

According to M. Deville these birds are met with throughout

Brazil, frequenting flowers in every possible situation. He thinks that their principal nourishment consists of small insects, although they may also suck the juices secreted by flowers. They are constantly on the wing and exceedingly quarrelsome, continually fighting for the possession of some particular flower. In perching they generally select a very elevated branch, and always one that is deprived of its leaves; they sometimes, in this situation, emit a plaintive song.

They pair, and both sexes take part in the incubation and bringing up of the young. The species observed by M. Deville were—

1. The Topaz Humming-bird (*Trochilus moschitus*). This is one of the most common in Brazil. It is particularly attached to the flowers of the Malvaceæ, and in places where these exist in large quantities the birds may be met with by myriads, constantly on the wing, and emitting a peculiar cry resembling ti-ri-ri-ri. They are to be seen in the greatest abundance from 7 or 8 o'clock in the morning to noon, and from 2 to 6 o'clock in the afternoon. Their breeding season is in December.

2. Swallow-tailed Humming-bird (*T. hirundinacea*). This bird frequents the banks of rivers, flies very rapidly, and is very bold. It is found all the year in Brazil, but seems to be most common from August to October.

3. Dingy Humming-bird (*T. lugubris*). This bird frequents thick woods and must be sought for at the flowery summits of trees. It flies very rapidly. It is most abundant in November and December.

4. Magnificent Humming-bird (*T. strumaria*). The nourishment of this bird consists principally of small insects which it captures whilst flying, darting from the tip of a dry branch to which it constantly returns after every capture. It is not the least frightened at the sight of men.

5. Tufted Humming-bird (*T. ornatus*). This, which is one of the smallest birds of Brazil, is to be met with, although always in small numbers, about the flowers of the orange trees.

6. Eared Humming-bird (*T. auritus*). This bird is met with from July to September in the *capoeiroes* or overgrown abandoned plantations. It prefers red flowers and flies very rapidly, constantly emitting a rough note.

7. Ruby Humming-bird (*T. colubris*). Of this species two varieties differing in size are met with, one being a third larger than the other. Its flight is heavy and noisy like that of a humble-bee. It prefers the flowers of orange trees, and those of the *Lantana rosea*.

8. Castelnau's Humming-bird (*T. Castelnaudii*, Bourc. and Muls.). This bird is very rare; it keeps below the flowers of a species of *Mimosa*, the sweetness of which attracts many insects. Its note is very sharp, and its flight very rapid and noisy. It was found near Cusco in Bolivia.

9. Sappho Humming-bird (*T. Sappho*). This bird inhabits the warm valleys of Bolivia. Its note is disagreeable, its flight light; it lives in little troops.

10. Cora Humming-bird (*T. Cora*). This bird appears during

the months of February, March, April and May, in moist places on the banks of the river Rimac, near Lima. It lives in flocks of eight or ten couples. Its flight is very light.

On the Hoazin (*Opisthocomus cristatus*).

This bird is one of those whose position has always been embarrassing to ornithologists. By Linnæus and some other authors it was placed amongst the Gallinaceous birds; Temminck referred it to his order *Omnivori*; Vieillot to the Passerine birds; whilst by Latreille it was included in a small order intermediate between the Gallinaceous and Passerine birds established by him for the reception of the pigeons and some other birds. This according to the views of M. Deville is its true position.

The author here describes the anatomy of the bird and the structure of its beak and tongue (the latter organs being figured on pl. 9). He states that it is entirely a phytophagous bird, the contents of its stomach always consisting of the leaves of a tree known in Brazil by the name of *Aninga*, in Guiana by that of *Moucou Moucou* (*Arum arborescens*, Linn.). It lives in large flocks on the banks of rivers, creeks and florid savannahs, where the above-mentioned tree grows abundantly. Its note is a rough, grunting cry. It has an odour of *castoreum*, which its flesh also possesses, so that it is not used as food. It nidificates in the lower parts of trees, forming its nest of branches covered with some softer matter; the female lays three or four eggs of a dirty white colour with scattered red spots. This bird inhabits Brazil, Peru, and Guiana.

On the Caurale (*Helias phalenoides*, Vieill.).

M. Deville furnishes a few anatomical observations on this bird, which he says lives in solitude on the banks of rivers and about marshy ground, feeding upon insects, mollusca and small fishes. It is excessively timid; its note is a weak whistling, to an imitation of which it will reply. It flies very lightly, and rarely perches during the day; at night it perches on trees, where it also nidificates. The female lays three or four oval eggs of a crimsoned yellow colour with some spots of brick-red and violet-brown. It lives in Brazil, Peru, and Cayenne.

On the Savacou (*Cancroma*).

Of this bird M. Deville also gives a few anatomical details. The bird lives in pairs in the neighbourhood of water, and feeds upon insects, mollusca and fishes. It is very fierce. The author thinks that there must be several species of this genus.

VII. Description of a new species of *Cotinga* brought by MM. de Castelnau and Deville from South America; by MM. Deville and Sclater (V. pp. 226–7). The authors give the following character of this bird:—

Cotinga porphyrolæma, Dev. and Sclat. C. supra nigra, dorsi plumis pennisque, nisi primariis, albo-marginatis, infra gula violacea

purpurea: rostro et pedibus nigris: uropygii plumis laxis admodum elongatis. Long. tot. m. 0·175; alæ m. 0·095; caudæ m. 0·065.

Inhabits moist woods in Peru, where it keeps at the tops of the trees. It generally lives in pairs; its flight is very light.

VIII. Studies on the *Anodontæ* of the Aube, by H. Drouet. Second article (V. pp. 244–251, and VI. pp. 285–290).

In this article the author describes those *Anodontæ* of the Department of the Aube which belong to the second and third groups of the genus,—the *Anatinæ* and *Piscinales*, that is to say, the species allied to *A. anatina* and *piscinalis*. Of the first of these groups there are three species—namely,

5. *A. anatina* (*Mytilus anatinus*, Linn.).
6. *A. Rayii*, Dup.
7. *A. parvula*, Drouet. (*A. coarctata*, Potiez and Michaud; the name changed because previously employed for an American species.)

The second group also includes three species—namely,

8. *A. piscinalis*, Nilss.
9. *A. Milletii*, Ray and Drouet.
10. *A. rostrata* (Kok.), Rossm.

We defer giving the characters of these species until the completion of the memoir.

These numbers also contain reports of the meetings of the Academy of Sciences from the 29th of March to the 21st of June 1852, and also some notices of new works.

PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL INSTITUTION OF GREAT BRITAIN.

April 15, 1853.

On the Identity of Structure of Plants and Animals.
By Thomas H. Huxley, F.R.S.

The lecturer commenced by referring to his endeavour last year* to show that the distinction between living creatures, and those which do not live, consists in the fact, that while the latter tend to remain as they are, unless the operation of some internal cause effect a change in their condition, the former have no such inertia, but pass spontaneously through a definite succession of states,—different in kind and order of succession for different species, but always identical in the members of the same species.

There is, however, another character of living bodies—*Organization*, which is usually supposed to be their most striking peculiarity as contrasted with beings which do not live; and it was to the essential nature of Organization that the lecturer on the present occasion desired to direct attention.

* "On Animal Individuality," Annals, vol. ix. p. 505.